ABSTRACT OF THE DISCLOSURE

The device comprises a detector (15) of radiation that could be neutron radiation and a detector (16) of another type of radiation, for example gamma radiation. The process consists in deducing a burn up fraction or irradiation of the nuclear fuel (26) by the measurement of the measured value of a radiation, while assuming that the fuel has a defined composition. One deduces from this the activity of the other radiation that one should obtain, and the accuracy of the assumption of the composition of the fuel if the measured value is close to this deduced value. The device (1), which makes it possible to obtain satisfactory measurements in a water filled storage bay (26), is fitted with means for attaching it to a boom (3) and for positioning it (6, 9) in a given position on a fuel storage cell structure (4). The device is displaced towards each fuel element.

Figure 1.

Figure 5

Neutron activity

Gamma activity

Burn up fraction